

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

BOSTON SCIENTIFIC CORPORATION and	)	<b>REDACTED</b>
BOSTON SCIENTIFIC SCIMED, INC.,	)	<b>PUBLIC VERSION</b>
	)	
Plaintiffs,	)	
	)	
v.	)	C.A. No. 05-768-SLR
	)	
CONOR MEDSYSTEMS, INC.,	)	
	)	
Defendant.	)	

**OPENING BRIEF IN SUPPORT OF CONOR MEDSYSTEMS'  
MOTION FOR SUMMARY JUDGMENT OF OBVIOUSNESS  
OF CLAIM 35 OF THE JANG '021 PATENT**

*Of Counsel:*

PATTERSON BELKNAP WEBB & TYLER LLP  
Gregory L. Diskant  
Eugene M. Gelernter  
Kathleen M. Crotty  
Scott W. Parker  
1133 Avenue of the Americas  
New York, NY 10036  
(212) 336-2000

ASHBY & GEDDES  
Steven J. Balick (I.D. #2114)  
John G. Day (I.D. #2403)  
Tiffany Geyer Lydon (I.D. #3950)  
Lauren E. Maguire (I.D. # 4261)  
500 Delaware Avenue, 8<sup>th</sup> Floor  
Wilmington, DE 19801  
(302) 654-1888

*Attorneys for Defendant  
Conor Medsystems, Inc.*

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# **TABLE OF CONTENTS**

	<u>Page</u>
TABLE OF AUTHORITIES .....	i
INTRODUCTION .....	1
STATEMENT OF UNDISPUTED FACTS .....	2
1.    The Stent of Independent Claim 23 .....	2
2.    Stents with Expansion Columns Linked by Connecting Struts Were Well-Known in the Art by 1996 .....	2
3.    In-Phase and 180 Degree Out-of-Phase Expansion Columns Were Well-Known by 1996.....	4
4.    Various Types of Connectors Were Well-Known in the Art by 1996 .....	5
(a)    Horizontally Oriented Connectors – Both Curvy and Straight – Were Well-Known in the Art.....	6
(b)    Diagonal (or Offset) Connectors – Both Curvy and Straight – Were Also Well-Known in the Art .....	7
5.    The Additional Requirements of Claims 35 .....	8
6.    BSC's Position Is that the Point of Novelty of Claims 35 and 36 Is the Supposed Requirement of "Curvy, Offset" Connectors .....	9
7.    Claim 35 Does Not Require "Curvy, Offset" Connectors Under the Approach Followed by Both Sides' Experts (and is Unlike Claim 36 in this Respect).....	10
8.    BSC's Expert Did Not Dispute – and Cannot Dispute – that Claim 35 as Drafted Covers Stents With the "Old Art" of Horizontal Connectors .....	21
ARGUMENT .....	23
THIS COURT SHOULD GRANT SUMMARY JUDGMENT THAT CLAIM 35 IS OBVIOUS AS A MATTER OF LAW .....	23
A.    The Standard for Summary Judgment .....	23
B.    The Supreme Court's Recent Decision in the KSR Case.....	23
C.    Claim 35 is Obvious Under KSR.....	25
D.    Secondary Considerations Support the Ultimate "Legal Determination" of Obviousness .....	29
CONCLUSION.....	31

**TABLE OF AUTHORITIES**

Page

**CASES**

Avia Group Int'l. Inc. v. L.A. Gear Calif., Inc., 853 F.2d 1557  
(Fed. Cir. 1988).....23

Beckson Marine, Inc. v. NFM, Inc., 292 F.3d 718 (Fed. Cir. 2002) .....23

Graham v. John Deere Co., 383 U.S. 1 (1966) .....23

KSR Int'l Co. v. Teleflex, Inc., 550 U.S. \_\_\_, 127 S. Ct. 1727,  
82 U.S.P.Q.2d 1385 (2007)..... *passim*

Leapfrog Enterprises, Inc. v. Fisher-Price, Inc., \_\_\_ F.3d \_\_\_,  
2007 WL 1345333 (Fed. Cir. May 9, 2007) .....25, 26

Oney v. Ratliff, 182 F.3d 893 (Fed. Cir. 1999) .....23

Scimed Life Sys., Inc. v. Johnson & Johnson, 225 F. Supp. 2d 422  
(D. Del. 2002), aff'd, 87 Fed. Appx. 729 (Fed. Cir. 2004) .....16

Vandenbraak v. Alfieri, 2005 WL 1242158 (D. Del. May 25, 2005)..... 21-22

**STATUTES**

35 U.S.C. § 103.....1

Fed. R. Civ. P. 56(c) .....23

Fed. R. Civ. P. 56(e) .....23

### **INTRODUCTION**

Conor Medsystems, Inc. ("Conor") respectfully submits this brief in support of its motion for summary judgment that claim 35 of Dr. Jang's U.S. Patent No. 5,922,021 (the "'021 patent") is obvious under 35 U.S.C. § 103. When one applies the recent Supreme Court decision in KSR International Co. v. Teleflex, Inc., 550 U.S. \_\_\_, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007), to the facts of this case, undisputed evidence establishes the obviousness of claim 35 as a matter of law.

What BSC has touted as the novel feature of the claim 35 invention is a "curvy, offset" connector, which runs from the top corner of an expansion strut pair in one column to the bottom corner of an expansion strut pair in the next column. BSC has described "curvy, offset" connectors as the novel aspect of claim 35, and is forced to do so because, as the inventor has conceded, curvy horizontally oriented connectors, with end points on a line parallel to the stent's longitudinal axis, were "old art." Indeed, one such "old art" stent with a curvy horizontal connector – designed two years before Jang – was found to be invalid as obvious in this Court.

If curvy horizontal connectors were "old art" – and Dr. Jang and BSC both concede that they were – then claim 35 is obvious as a matter of law. Indeed, claim 35, as drafted, is not limited to stents with "curvy, offset" connectors. Rather, as Cordis' expert has demonstrated without contradiction, claim 35 is broad enough to – and typically does – cover the "old art" of stents with curvy horizontal connectors. As such, it is obvious under § 103. What BSC touts as claim 35's point of novelty – the "curvy, offset" connector – is simply not a requirement of claim 35.

Cordis' expert Dr. Buller pointed this out, in detail and with illustrations, in his expert report and so testified in his deposition. In his responsive expert report on validity and



again in his deposition, BSC's expert Prof. Moore did not (and could not) disagree. Thus, the opinion of Cordis' expert that claim 35 covers the "old art" of stents with curvy horizontal connectors stands un rebutted. Summary judgment of obviousness is accordingly appropriate.

### **STATEMENT OF UNDISPUTED FACTS**

Dr. Jang filed a provisional application on April 26, 1996, and filed the application that issued as the '021 patent on April 25, 1997.<sup>1</sup>

The only claim of the '021 patent that BSC is asserting in this case is dependent claim 35, which depends from independent claim 23.

#### **1. The Stent of Independent Claim 23**

Independent claim 23 is directed at a stent with two "expansion columns" and a "connecting strut column." Thus, claim 23 recites a stent comprising: (a) a "first expansion strut column" formed of a plurality of "expansion column strut pairs," (b) a "second expansion strut column" formed of a plurality of "expansion column strut pairs," and (c) a "connecting strut column" positioned between the two "expansion columns" and formed of a plurality of "connecting struts."

#### **2. Stents with Expansion Columns Linked by Connecting Struts Were Well-Known in the Art by 1996**

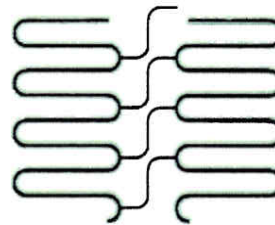
BSC has conceded that by 1996, stent art was a "crowded" field. See Ex. A at Tr. 72:16-73:5. The basic components of stent design – expansion columns (or rings) and connectors – were well-known. Moreover, the basic types of expansion columns (in-phase or 180 degree out-of-phase rings) also were well-known. So were a variety of connector designs, including many horizontally-oriented connectors (both straight and curvy) with end-points on a

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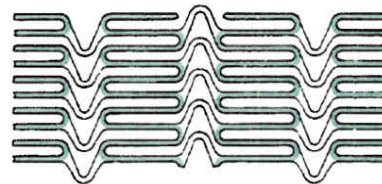
<sup>1</sup> For purposes of this motion and this motion only, Conor assumes that claim 35 is entitled to the benefit of the 1996 priority date that is more favorable to BSC.

line parallel to the stent's longitudinal axis. Persons of ordinary skill employed by medical device manufacturers all were using these features to create stents different from those sold by other competitors.

Against the background of this "crowded" prior art, BSC does not – and cannot – suggest that there is anything novel about having expansion columns linked by connecting columns. BSC concedes that stents with two "expansion columns" made up of "expansion strut pairs" and a "connecting strut column" made up of "connecting struts" were well-known as of 1996. Indeed, BSC has described these components as the basic "building blocks" of prior art stent design. See Ex. A at Tr. 72:17-73:5. For example, U.S. Patent No. 6,203,569 Wijay (Ex. B hereto), and U.S. Patent No. 5,733,303 (Israel) (Ex. C hereto) are among the many prior art patents that show stents with two or more rings or "expansion columns" and with "connecting strut columns."



**Wijay '569, Fig. 4**



**Israel '303, Fig. 7**

Dr. Jang has admitted in this case that stents with "expansion columns" and "connecting strut columns" were well-known and were not something he invented (Ex. D at 354:18-355:8):

Q. So I take it you don't contend that you were the first person to invent expansion columns as a building block for stent design; is that right?

A. Expansion column?

Q. Yes.

A. Expansion column concept was previously existing.

Q. Okay. And it also was previous existing to use connecting columns to join – connecting strut columns to join together expansion columns?

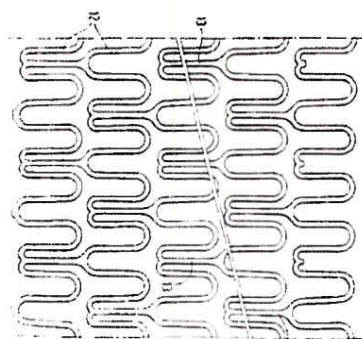
A. Right.

**3. In-Phase and 180 Degree Out-of-Phase Expansion Columns Were Well-Known by 1996**

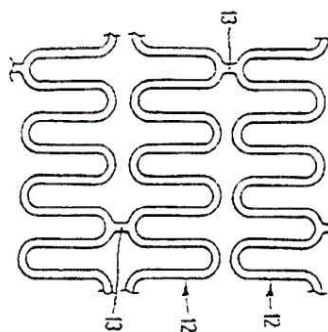
As of 1996, commercially available and well-known stents typically had expansion columns or tubular members that were either in-phase (*i.e.*, had adjacent expansion columns or tubular members that were aligned and all facing in the same direction) or 180 degrees out-of-phase (*i.e.*, had adjacent columns of expansion strut pairs or tubular members were aligned and facing in opposite directions, in a mirror image pattern).

One well-known example of an in-phase design that was commercially available in Europe was ACS's Multi-Link stent. Well-known examples of 180 degree out-of-phase designs included AVE's MicroStent II and BSC's own NIR stent.

U.S. Patent No. 5,514,154 (Lau) (Ex. E) is an example of a prior art patent that discloses both in-phase designs (as shown on the left below) and 180 degree out-of-phase designs (as shown on the right below):



**Lau '154, Fig. 5**



**Lau '154, Fig. 11**



By 1996, having expansion columns that were either in-phase or 180 degree out-of-phase was a basic design choice. As Cordis' engineering expert Dr. Ron Solar stated in his expert report on validity, "by 1996, the choice of in-phase rings, out-of-phase rings, or rings somewhere in between, with varied-shaped ends, was a routine design choice exercised by engineers." Ex. F at 10. Cordis' expert Dr. Buller agreed that by 1996 "it was known to connect adjacent rings that were in-phase, 180° out-of-phase or some other offset." Ex. G at 19. In-phase and 180 degree out-of-phase designs both were "well known in the art," *id.* at 30, and recognized as obvious alternatives for a stent's expansion columns or rings. *Id.*

BSC's expert Prof. Moore conceded in his rebuttal expert report that "stents with in-phase and out-of-phase designs were known in the art in 1996." Ex. I, at ¶ 18. Similarly, Prof. Moore conceded in his trial testimony in the 03-027 action that 180 degree out-of-phase designs were a "basic choice of stent design by 1996." D.I. 388, C.A. No. 03-027-SLR at Tr.1101:9-21.

Dr. Jang was well-aware of in-phase designs. Indeed, the stents depicted in Figs. 1A, 2A, 2B, 3A, 3B, 4A, 4B, 5, 6A, 6B, 7A, and 7B of his '021 patent all had an in-phase design. Moreover, the figures in his provisional application (which the '021 specification incorporates by reference) all had an in-phase design. Dr. Moore has agreed that "most of the designs" in the '021 patent are "in-phase." D.I. 388, C.A. No. 03-027-SLR at Tr. 1109:16 to 1110:1.

#### **4. Various Types of Connectors Were Well-Known in the Art by 1996**

By 1996, the use of connectors to impart flexibility was well-known, and a variety of connector configurations also were well-known. As BSC's expert Prof. Moore has testified, by 1996 there was "a lot known about how to connect stents, how to connect rings to one another." D.I. 388, C.A. No. 03-027-SLR at Tr. 1104:17-22.

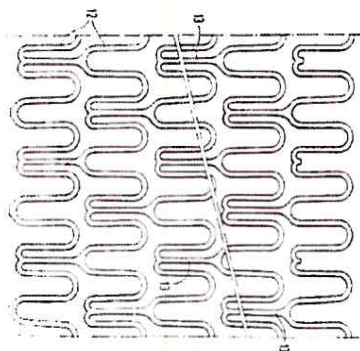


(a) **Horizontally Oriented Connectors – Both Curvy and Straight – Were Well-Known in the Art**

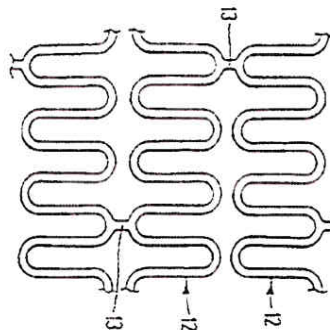
One well-known type of connector as of 1996 was horizontally oriented connectors – i.e., connectors whose end points are generally parallel to the stent's longitudinal axis when rendered in two dimensions. In his deposition in this case, Dr. Jang admitted that stents with horizontal connectors – both straight and curvy -- were "old art" by 1996 (Ex. D at 344:18-20):

I thought ***horizontal ends, both ends having horizontal points, is already old art.*** It's already proven how well it will perform or not perform .... (Emphasis added).

The horizontal connectors that were well-known as of 1996 included straight horizontal connectors, as depicted, for example, in the Lau '154 patent (Ex. E):



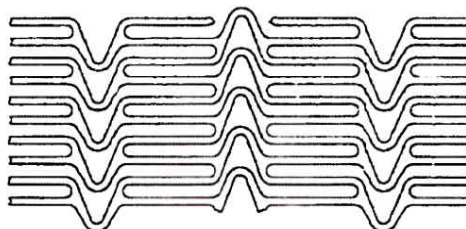
**Lau '154, Fig. 5**



**Lau '154, Fig. 11**

Curvy horizontal connectors were also well-known as of 1996. They included curvy horizontal connectors, as disclosed, e.g.,

in the Israel '303 patent (Ex. C), whose commercial embodiment was BSC's own NIR stent. Other examples included the curvy horizontal connectors disclosed in U.S. Patent



**Israel '303, Fig. 7**

Nos. 5,643,312 (Fischell) (Ex. J) and 5,449,373 (Pinchasik) (Ex. K).

Dr. Jang has admitted that curvy connectors were known in the prior art (Ex. D at 355:19-22):

Q. It was certainly known in the art prior to you to use curvy connection – connecting struts columns; correct?

A. Yes.

Prof. Moore agreed (Ex. L at Tr. 137:8-16):

Q. Would you agree that stents with curvy connecting struts were known in the art by 1996?

A. There perhaps were some designs out there with that feature.

Q. There were designs out there with that feature, right, not just perhaps?

A. I believe so.

**(b) Diagonal (or Offset) Connectors – Both Curvy and Straight – Were Also Well-Known in the Art**

Although not directly relevant to this motion, Conor will demonstrate at trial (if necessary) that the prior art also included various examples of connectors with a diagonal orientation, i.e., with end points that were "offset" from each other. Dr. Jang has admitted that connectors with an "offset" orientation were known as of 1996 (Ex. D at 356:16-21):

"Q. Okay. And it was also known – you don't claim to be the first person to invent the idea of having offset connection strut columns? You saw that in Palmaz's 417 patent.

A. Yes. That – that was – that particular concept was – I was aware.

The diagonal connectors that were known in the prior art included diagonal connectors that were straight bars, as shown for example, in Fig. 2A of Pinchasik '373 (Ex. K), and Fig. 4 of U.S. Patent No. 6,348,065 to Brown (Ex. M). The prior art also included diagonal connectors that had a curvy shape, as shown, e.g., in Fig. 4 of Wijay '569 (Ex. B).

**5. The Additional Requirements of Claims 35**

Claim 35 – the only claim that BSC is asserting in this case – depends from claim 23. In addition to the requirements of two "expansion columns" and a "connecting strut column" that are found in claim 23, dependent claim 35 adds further requirements for the arrangement of the connecting struts. In particular, claim 35 requires that the ends of connecting struts be coupled to specific corners of specific expansion strut pairs in the two expansion columns. BSC's expert Prof. Moore has referred to these requirements as calling for an "upper-corner-to-lower-corner" connection. See Ex. I at ¶ 29.

Thus, claim 35 recites that the first connecting strut is coupled on its proximal end to the "first corner of the second expansion strut pair of the first expansion strut column" and coupled on its distal end to the "second corner of the first expansion strut pair of the second expansion strut column." Likewise, claim 35 recites that the second connecting strut is coupled on its proximal end to the "first corner of the fourth expansion strut pair of the first expansion strut column" and coupled on its distal end to the "second corner of the third expansion strut pair of the second expansion strut column."

BSC asserts in this case that claim 35 requires "curvy, offset" connectors. Thus, Prof. Moore has opined that "curvy, offset" connectors are required by claim 35 (Ex. L at 32:4-8):

Q. Is it your opinion that claim thirty-five of the '021 patent requires curvy offset connectors?

A. .... Yes, I believe that's the case.

See also Ex. H at Ex. M, at 3, 5. (Prof. Moore has testified that "[o]ffset would mean that the connection points to the expansion columns just proximal and distal would be longitudinally offset from one another. In other words, they would not be at the same circumferential position



around the stent." Ex. L at 39:11-17; see also id. at 48:22 to 49:3 (using the term "offset" connectors as "only referring to the ends of the connecting strut itself"), 42:16-22, 45:9-16).

**6. BSC's Position Is that the Point of Novelty of Claims 35 and 36 Is the Supposed Requirement of "Curvy, Offset" Connectors**

Claim 35 of the '021 patent (which is in issue in this case) and claim 36 (which was asserted against Cordis in the 03-027 case) have some similarities. Both claims incorporate claim 23's requirement of a three-part connector, with an intermediate section that is "non-parallel" to the connector's proximal and distal sections.<sup>2</sup> '021 patent at 21:9-11. That is what BSC calls a "curvy" connector.

As described above, claim 35 requires that this three-part "curvy" connector be positioned to have an "upper-corner-to-lower-corner" connection. Ex. I at ¶ 29. On the other hand, claim 36 requires that the three-part connector of independent claim 23 be oriented so that it has a "lower-corner-to-upper-corner" (or second-corner-to-first-corner) connection. The "lower-corner-to-upper-corner" connection of claim 36 is required by the language of that claim, which recites that the first connector is connected on its proximal end to the "second corner of the second expansion strut pair of the first expansion column" and connected on its distal end to the "first corner of the first expansion strut pair of the second expansion column." '021 patent at 22:42-47.

For both claims 35 and 36, BSC has described the claims as requiring "curvy, offset" connectors, and for both claims it has taken the position that "curvy, offset" connectors are the point of novelty. Thus, BSC's expert Prof. Moore has opined in this case that the invention of claim 35 is a "curvy, offset" connector. Ex. L at 32:4-8. Similarly, in the 03-027

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<sup>2</sup> As noted above, claim 35 depends from independent claim 23 of the '021 patent. Claim 36 depends from claim 24, which in turn depends from claim 23.